



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor: Hilal Ezzeddine

Title: MODE-SWITCHING TRANSFORMER

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CERTIFICATE OF MAILING

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RESPONSE TO RESTRICTION REQUIREMENT

July 25, 2005

TO THE COMMISSIONER FOR PATENTS:

This communication is in response to the Restriction Requirement dated June 28, 2005 in which the Examiner restricted the pending claims in the present patent application.

The Examiner has restricted the claims into four groups: claims 1 – 12 (Group I), claims 13-18 (Group II), claims 19-20 (Group III), and claims 21-23 (Group IV). As discussed below, the Applicants respectfully traverse the restriction requirement on the

grounds that the Examiner can search and examine the entire application without serious burden. Although the Applicants traverse the restriction requirement as discussed below, they provisionally elect to prosecute Group I claims 1 – 12 if the Examiner does not withdraw the restriction requirement.

According to MPEP § 803, if the Examiner can search and examine the application without serious burden, then he/she **MUST** examine the application on the merits even though it includes claims to independent or distinct inventions. As discussed below, because claims 1 – 23 recite similar subject matter, the Examiner can perform a single search and examination that will cover all of the claims. Consequently, the Examiner can search and examine the application without serious burden, and, therefore, **MUST** examine all of the claims 1 – 23 together.

More specifically, claim 1 recites:

1. **A mode-switching transformer comprising a first line in common mode and a second line in differential mode, each line comprising two sections in series respectively coupled with one of the two sections of the other line and all sections having the same lengths, wherein the common mode line is connected in series with a capacitor, to lower the central frequency of the transformer passband, the $\lambda/4$ lengths of the sections being chosen to correspond to a central frequency greater than the central frequency desired for the transformer.**

Claim 7 recites:

7. **A mode-switching transformer, comprising:**
a common mode winding;
a differential mode winding electromagnetically coupled with the common mode winding; and
a capacitor electrically coupled to the common-mode winding.

Claim 13 recites:

13. An integrated circuit, comprising:
a mode-switching transformer, including,
a common mode winding;
a differential mode winding electromagnetically coupled with
the common mode winding; and
a capacitor electrically coupled to the common-mode winding.

Claim 19 recites:

19. An electronic system, comprising:
an integrated circuit, including,
a mode-switching transformer, including,
a common mode winding;
a differential mode winding electromagnetically coupled with
the common mode winding; and
a capacitor electrically coupled to the common-mode winding.

And claim 21 recites:

21. A method of reducing a central frequency of a transformer having first and second windings, the method comprising:
sizing the windings based upon a first frequency that is greater than the
desired central frequency of the transformer; and
coupling a capacitance to the first winding.

Because these claims recite related subject matter, examination of these claims will involve similar analyses. Therefore, it is only slightly more burdensome for the Examiner to search and examine claims 1 – 23 than it would be for him/her to search and examine the provisionally elected Group I claims 1 – 12. Consequently, because

there is no serious burden on the Examiner to search and examine all of the claims 1 – 23, the **restriction is improper**. Therefore, the Examiner **MUST** withdraw the restriction and examine all of the claims.

Therefore, as discussed above, the Applicants respectfully request the Examiner to withdraw the restriction requirement and to examine all of the claims 1 - 23.

If the Examiner believes that a phone interview would be helpful, he is respectfully requested to contact the Applicants' attorney, Paul F. Rusyn, at (425) 455-5575. In the event an additional fee is due for this Response, you are hereby authorized to charge such payment to Deposit Account No. 07-1897.

Respectfully submitted,

GRAYBEAL JACKSON HALEY LLP

Paul F. Rusyn
Attorney for Applicant
Registration No. 42,118
155 - 108th Avenue NE, Suite. 350
Bellevue, WA 98004-5973
(425) 455-5575

Enclosure:

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